A Call to Action: Addressing Socioeconomic Disparities in Childhood Unintentional Injury Risk

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Maya arrives at the clinic after a long bus ride with her infant and toddler. When the pediatrician asks about childcare, Maya explains that her aunt babysits while Maya works. Maya does not own a car, but her aunt sometimes drives the children in her car, which is not equipped with car seats. Maya is unable to afford them and is reluctant to ask her aunt to purchase them, fearful of seeming unappreciative. The pediatrician offers Maya an infant car seat and a booster seat from the clinic's supply, but Maya pictures herself, hands full with an inquisitive toddler and a fussy infant on the bus, and declines.

BACKGROUND

In the United States, despite the availability of data describing injury patterns, risks, and effective prevention strategies,[1,2] unintentional injuries remain the leading cause of pediatric morbidity and mortality.[3] After years of decreasing deaths, there has been the greatest surge in childhood mortality (ages 1–19 years) in the United States in the past decade, largely attributable to increased deaths from preventable injuries.[4] In 2020, the Centers for Disease Control and Prevention reported 7010 deaths, 176 811 hospitalizations, and 2.36 million emergency department visits for unintentional injuries. These visits accounted for >$520 billion in medical spending and >$890 billion in the value of statistical lives lost.[5]

The risk of preventable injury is not equal for all individuals. Social factors (such as isolation, stress, and risk-taking behaviors), geographic factors (such as community norms, government divestment in neighborhoods, and local legislation), and biological factors (such as age, weight, and sex) intersect with access to injury prevention services to impact an individual's risk for injury.[6] Although beyond the scope of this call to action, the impact of structural racism on disparities in injury prevention, particularly in children, cannot be underestimated. Recognizing these disparities as unacceptable and advocating for changes in legislation, infrastructure investment, education, and health care to address structural racism is necessary to improve health equity around socioeconomic disparities in childhood injury risk.[7]

In this commentary, we describe how socioeconomic inequities contribute to discrepant unintentional injury risks and call for an expansion of investment in innovative and targeted prevention strategies to narrow this disparity.

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THE IMPACT OF POVERTY ON INJURY

Socioeconomic disparities exist at every level of injury prevention, treatment, and outcome. Families living in poverty may have less opportunity to prevent injuries. For example, a child living in poverty is more likely to live in a rental home or a home belonging to a friend or family member, to which their guardian(s) may not be able to easily make safety modifications, such as reducing the water heater's maximum temperature setting or installing smoke alarms.[8,9] People living in poverty are not only more likely to experience injuries but those injuries are more likely to be severe. For instance, people experiencing poverty are more likely to experience residential fires and suffer more severe burns and associated inhalation injuries as a result.[10,11] Even after an injury, the impact of missed work to care for an injured child may lead to the loss of wages, disproportionately affecting those at a higher risk of developing new or worsening food and housing insecurity.

BARRIERS AND OPPORTUNITIES

Although pediatricians play a role in influencing safety behaviors, the effectiveness of counseling is limited without addressing real-life barriers to implementation. Although providing safety equipment to families in health care settings is possible, it can pose an array of challenges, including equipment cost, salary support for personnel, space needs for programming and supply storage, and patient-centered issues, such as transportation challenges.[12] However, coupling safety education with provisions has proven feasible and successful across a wide range of injury prevention interventions, including smoke alarms, carbon monoxide detectors, car seat installation, bicycle helmet fitting and distribution, cribs for safe sleep, and provisions for safe firearm and ammunition storage.[12–18]

A variety of small-scale innovative models to improve the uptake of preventative interventions have been successfully trialed, including home visit programs, mobile safety centers, clinic-based kiosks, clinical decision aids, smartphone applications, and the use of home delivery services to send safety products to patient's homes.[19–24] Future directions could take the form of virtual safety centers integrated into the electronic health record, allowing providers to place orders using the same ordering system employed for vaccines and medications. Alternatively, a centralized Web platform could serve as a one-stop shop for hospital systems, regions, or states in which, coupled with access to safety product delivery services, video conference technologies could be used to connect patients to safety experts.

Additionally, with the assistance of electronic medical records, spatial analysis, and geo-mapping, data can be used to identify injury clusters and inform the most impactful interventions locally and regionally.[25] For example, American Indian and Alaskan Native (AIAN) children are significantly more likely to live in poverty and have public health insurance when compared with non-Hispanic white children. AIAN infants also have a significantly higher rate of sudden infant death syndrome when compared with their non-Hispanic white counterparts.[26] With this in mind, aggressive safe sleep interventions, including the distribution of culturally acceptable devices such as cradleboards, should be directed specifically at AIAN communities.

Lastly, modifications to physical environments, such as repairing sidewalks, adding crosswalks, and building neighborhood parks can impact injury risk. In Baltimore, children are 5 times more likely than the national average to experience a pedestrian injury, and the children at the greatest risk are more likely to be Black, live in poverty, not have access to a motor vehicle, and live farther from school.[27] Investing in low-income, predominately Black neighborhood improvement projects and public health campaigns to improve norms around the use of safety equipment may be prohibitively expensive for lower-resourced communities;[28–30] however, the cost of preventative measures may be significantly lower than the medical care cost saved as a result, which could be considered in the decision-making around which neighborhoods in which to invest.[31,32]

A CALL TO ACTION

- Advocacy groups should influence policy change to expand federal and state funding for targeted injury prevention efforts that reflect the disproportionate risk, severity, and impact of injury on children living in poverty.
- With an eye toward health equity, federal and state programs should expand the health coverage of necessary provisions focused on installation and home adaptations to reduce financial and systemic barriers to the implementation of injury prevention modifications experienced by people living in poverty.[6,7]
- Hospitals, providers, and other health care organizations should pursue creative, technologically advanced solutions that can reduce socioeconomic disparities in injury risk.
- Community organizations that focus on injury prevention, such as local health departments, can expand the reach and impact of injury prevention programs that are tailored toward specific communities.
- Local governments and housing agencies should prioritize investments in environmental and structural modifications to low-income neighborhoods as an injury prevention strategy.

CONCLUSIONS

Imagine a different end to Maya's story in which the pediatrician offers to have the car seats shipped directly to her aunt's home. The pediatrician places the order in the electronic health record, a virtual safety center instructs Maya on installation, and Medicaid covers the expense. Investments in comprehensive individualized and innovative injury prevention programs, coupled with neighborhood improvements to address environmental conditions that put children experiencing poverty at risk for injury, are possible and can narrow socioeconomic gaps in injury prevention.

ABBREVIATION

AIAN: American Indian and Alaskan Native

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